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EXAMINER	
BATTAGLIA, MICHAEL V	
ART UNIT	**PAPER NUMBER**
2652	

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/616,364	UCHIYAMA, MINEHARU	
	Examiner	Art Unit	
	Michael V Battaglia	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-9,18,19,22,23 and 25-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *27-32* is/are allowed.

6)☒ Claim(s) *6-9,18,19,22,23,25,26 and 33-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 July 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10 June 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action, dated August 2, 2004, is in response to Applicant's request for continued examination and amendment, filed July 2, 2004. Claims 1-5, 10-17, 20-21 and 24 are canceled. Claims 6-9, 18-19, 22-23 and 25-35 are pending.

Claim Objections

1. Claim 33 is objected to because of the following informality. On line 15 of claim 33, replacing "the other surface" with -another surface— to avoid improper antecedent basis issues. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 recites the limitations "said first diffraction grating" and "said second diffraction grating" in line 2. There is insufficient antecedent basis for these limitations in the claim. In the prior art rejections below, the limitations will be interpreted as -the first and second surfaces of said diffraction grating--.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 18 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Abe et al (hereafter Abe) (US 6,084,843).

In regard to claim 18, Abe discloses an optical head device comprising; a first light source for emitting a first light beam of a first wavelength (Fig. 24, element 21B); a second light source, which is placed at almost the same position as that of the first light source, emitting a second light beam of a second wavelength differing from said first wavelength (Fig. 24, element 21A); a single block wherein the first and the second light beams are aligned thereon (Fig. 24, element 72); a recording medium having tracks (Figs. 22 and 23, elements 41A and 41B); and an objective lens (Figs. 22 and 23, element 26), the first light source and the second light source are disposed such that the optical axis of the beam of light of shorter wavelength of said first light source coincides with the optical axis of said objective lens (Fig. 22), and the optical axis of the beams of light of a longer wavelength of said second light source is slanted from the optical axis of said objective lens (Fig. 23).

In regard to claim 19, Abe discloses that said recording medium includes a first disk (Fig. 22, element 41B) to be read from when said first light source is used and a second disk (Fig. 23, element 41A) to be read from when said second light source is used, wherein the substrate thickness of the first disk is thinner than the substrate thickness of the second disk (Col. 1, lines 43-45).

4. Claims 22-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitamura et al (hereafter Kitamura) (US 5,986,996).

In regard to claim 22, Kitamura discloses an optical head device comprising: a first light source (Fig. 17, element 3b) for emitting a light beam of a first wavelength; a second light source (Fig. 17, element 3a) which emits a light beam of a second wavelength differing from said first wavelength; a single block (Figs. 16 and 17, element 10) wherein the first and second light sources are aligned thereon; an objective lens (Fig. 16, element 5) for causing the laser light from said first or second light source to converge on an optical disk; and a hologram (Fig. 16, element 6) for diffracting the light reflected from said optical disk and returned through said objective lens and directing the reflected light to a light-receiving element, wherein, if the distance between the center of said hologram and the optical axis of said first light source is d1 and the distance between the center of said hologram and the optical axis of said second light source is d2 in a projection plane in the direction of the optical axis of said objective lens, the equation d1 = d2 is almost satisfied (Figs. 16-17).

In regard to claim 23, Kitamura discloses an optical head device comprising: a first light source (Fig. 17, element 3a) for emitting a light beam of a first wavelength; a second light source (Fig. 17, element 3b) which emits a light beam of a second wavelength differing from said first wavelength; a single block (Figs. 16 and 17, element 10) wherein the first and second light sources are aligned thereon; an objective lens (Fig. 16, element 5) for causing the laser light from said first or second light source to converge on an optical disk; and a hologram (Fig. 16, element 6) for diffracting the light reflected from said optical disk and returned through said objective lens and directing the reflected light to a light-receiving element, wherein, if the distance between the center of said hologram and the optical axis

of said first light source is d1 and the distance between the center of said hologram and the optical axis of said second light source is d2 in a projection plane in the direction of the optical axis of said objective lens, the equation d1 < d2 is almost satisfied (Figs. 16-17).

5. Claims 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Kajiyama et al (hereafter Kajiyama) (US 6,181,668).

In regard to claim 25, Kajiyama discloses an optical head device comprising: a first light source (Figs. 41 and 42, element 61) for emitting a light beam of a first wavelength (Col. 22, lines 6-7); a second light source (Figs. 41 and 42, element 62) which emits a light beam of a second wavelength differing from said first wavelength (Col. 22, lines 8-29); a single block wherein the first and the second light source are aligned thereon (Fig. 41, element 60); an objective lens (Fig. 41, element 21) for causing the laser light from said first or second light source to converge on an optical disk; and a hologram (Figs. 41 and 42, element 25) for diffracting the light reflected from said optical disk and returned through said objective lens and directing the reflected light to a light-receiving element (Figs. 41 and 42, element 411), wherein if the distance between said first light source and said second light source is d (Fig. 42 and Col. 23, Table 5, element Z2-Z1), the distance between said first and second light sources and said hologram is in the range from 20d to 40d (Fig. 42 and Col. 23, Table 5, element L). It is noted that (0.1490, 5), (0.2989, 10), (0.4484, 15), (0.5019, 15) and (0.5704, 15) having the format (Z2-Z1 (mm), L (mm)) in Table 5 all satisfy the claimed limitation.

In regard to claim 26, the hologram of Kajiyama (Figs. 41 and 42, element 25) is interpreted as a nonpolarization hologram because the hologram diffracts the return light based on the pitch of the gratings of the hologram (Fig. 42, element P and Col. 22, lines 64-

67) and not on the polarity of the light. It is noted that the polarizing glass (Fig. 41, element 22) does use polarity of the light beams to selectively limit the size of the aperture.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6 and 9/6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda (JP 11-185282) in view of Ohnishi et al (hereafter Ohnishi) (US 6,507,009) and further in view of Mori et al (hereafter Mori) (US 5,717,674). The examiner notes that the citations of the detailed description of Toyoda reference the translation provided by the Japanese Patent Office web site.

Toyoda discloses an optical head device comprising: a first light source for emitting a light beam of a first wavelength (Fig. 2, element 21b); a second light source which emits a light beam of a second wavelength differing from said first wavelength (Fig. 2, element 21a); a single block wherein the first and the second light source are aligned thereon (Fig. 2, element 21); an objective lens for causing the light beams from said first light source and second light source to converge on an optical disc (Fig. 2, element 24); a diffraction grating (Fig. 2, element 22) having a first surface; the first surface of the diffraction grating having a first order diffraction efficiency of almost zero for the light beam forwarded from said first light source and emitting the first-order diffraction light for the light beam forwarded from said second light source (Page 4, lines 17-21); wherein the first surface of the diffraction

grating does not diffract returned light from a recording medium (Fig. 2). Toyoda does not disclose that the diffraction grating has a second surface that is designed to realize a differential push-pull method of sensing a tracking error sense signal; wherein the second diffraction grating does not diffract returned light from the recording medium.

Ohnishi discloses a diffraction grating (Fig. 10, element 2a) having a surface; wherein the surface of the diffraction grating does not diffract returned light from a recording medium (Fig. 10). The surface of the diffraction grating diffracts the light beam forwarded from the first light source into three beams (Col. 10, lines 11-14), thereby allowing use of a differential push-pull method to generate a tracking error signal (Col. 2, lines 25-27). The surface of the diffraction grating is therefore interpreted as being designed to realize a differential push-pull method of sensing a tracking error sense signal. Ohnishi teaches that the differential push-pull method is beneficial because it cancels an offset caused by displacement of the objective lens (Col. 2, lines 22-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include, in the optical head device of Toyoda, the diffraction grating having a surface of Ohnishi, the motivation being to facilitate generation of a tracking error signal using the differential push-pull method when using the light beam from the first light source and thereby, cancel an offset caused by displacement of the objective lens. Toyoda in view of Ohnishi does not disclose that the diffraction grating of Toyoda having the first surface also has the surface of the diffraction grating of Ohnishi.

Mori discloses forming the surfaces of two diffracting devices as part of one optical element (Col. 12, lines 33-36). Mori teaches that by doing so, the relative positions are accurately set and optical adjustment is simplified (Col. 3, line 66-Col. 4, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the surface of the diffraction grating of Toyoda and the surface of the diffraction grating of Ohnishi in the optical head device of Toyoda in view of Ohnishi as one diffraction grating having first and second surfaces as suggested by Mori, the motivation being to accurately set the relative positions of the surfaces and simplify optical adjustment. It is noted that the surface of Toyoda is interpreted as a first surface and the surface of Ohnishi is interpreted as a second surface.

In regard to claim 9/6, the underlying material of Mori (Fig. 10) on which the surfaces (Fig. 10, elements 12 and 13) are integrally formed is interpreted as a substrate. Therefore, in the optical head device of Toyoda in view of Ohnishi and further in view of Mori, the first and second surfaces of the diffraction grating are formed integrally on a substrate.

7. Claims 7 and 9/7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi and further in view of Mori as applied to claim 6 above, and further in view of Katsuma (US 6,094,308).

Toyoda in view of Ohnishi and further in view of Mori does not disclose the depth h01 of the grating groove of said first diffraction grating is expressed by $h01 = m1 \cdot \lambda 1/(n-1)$ and the depth h02 of the grating groove of said second diffraction grating is expressed by $h02 = m2 \cdot \lambda 2/(n-1)$ where n1 is the refractive index of said first diffraction grating, n2 is the refractive index of said second diffraction grating; $\lambda 1$ is the wavelength of said first light source; $\lambda 2$ is the wavelength of said second light source, and ml and m2 are natural numbers.

Katsuma discloses an optical head device comprising a first and second light source emitting light beams of different wavelength and a diffraction grating, which is provided on the optical path between a first light source (Fig. 6, element 1C) and an objective lens (Fig. 6, element 5) and on the optical path between a second light source (Fig. 6, element 1B) and the objective lens and which has a first-order diffraction efficiency of almost zero for the light beam from one of the said light sources and emits the first-order diffraction light for the light beam from the other said light source (Col. 2, lines 50-54). Katsuma further discloses that the diffraction grating has a groove depth h expressed by $h = m \cdot \lambda/(n-1)$ where n is the refractive index of said diffraction grating, λ is the wavelength of the light that is not diffracted, and m is a natural number (Col 2, lines 21-41). Katsuma teaches that a diffraction grating with a groove depth meeting the aforementioned expression will efficiently direct light beams of different wavelengths to their corresponding optical media (Col. 1, lines 12-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the groove depth of each of the first and second surfaces of the diffraction gratings of Toyoda in view of Ohnishi and further in view of Mori meet the diffraction grating groove depth expression of Katsuma using the wavelength of the light beam that is not diffracted ($\lambda 1$ or $\lambda 2$) as the value for λ; the motivation being to have diffraction gratings that efficiently direct light beams of different wavelengths to their corresponding optical media. It is noted that the surface of the diffraction grating of Ohnishi (Fig. 10, element 2a), interpreted as the second surface of the diffraction grating, does not diffract the light beam having the wavelength $\lambda 2$ from the second light source (Fig. 10, element 1b).

In regard to claim 9/7, the underlying material of Mori (Fig. 10) on which the surfaces (Fig. 10, elements 12 and 13) are integrally formed is interpreted as a substrate. Therefore, in the optical head device of Toyoda in view of Ohnishi and further in view of Mori, the first and second surfaces of the diffraction grating are formed integrally on a substrate.

8. Claims 8 and 9/8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toyoda in view of Ohnishi and further in view of Mori and further in view of Katsuma as applied to claim 7 above, and further in view of Shiono.

Toyoda in view of Ohnishi and further in view of Mori and further in view of Katsuma discloses the optical head device as claimed in claims 7. Toyoda in view of Ohnishi and further in view of Mori and further in view of Katsuma does not disclose that the natural numbers m1 and/or m2 are 1.

Shiono discloses diffraction gratings that meet the groove depth expressions of $m1 \cdot \lambda 1/(n-1)$ and $m2 \cdot \lambda 2/(n-1)$, wherein the natural numbers m1 and m2 are 1 (Col. 12, lines 61-62 and 64-65). Shiono teaches that with these groove depths, the diffraction grating will have maximum first-order diffraction efficiency for the respective wavelength (Col. 12, lines 62-64 and 65-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the diffraction gratings with the groove depth expressions of Toyoda in view of Ohnishi and further in view of Mori and further in view of Katsuma with the natural numbers in the expressions equal to 1 as suggested by Shiono; the motivation being for each of the diffraction gratings to have a maximum first-order diffraction efficiency for the light of the wavelength to be diffracted.

In regard to claim 9/8, the underlying material of Mori (Fig. 10) on which the surfaces (Fig. 10, elements 12 and 13) are integrally formed is interpreted as a substrate. Therefore, in the optical head device of Toyoda in view of Ohnishi and further in view of Mori, the first and second surfaces of the diffraction grating are formed integrally on a substrate.

9. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kouno (US 6,404,709) in view of Toyoda and further in view of Ohnishi and further in view of Mori.

In regard to claim 33, Kuono discloses a disk drive system comprising: a first light source for emitting a light beam of a first wavelength (Fig. 1, element LD1); a second light source which emits a light beam of a second wavelength differing from said first wavelength (Fig. 1, element LD2); a single block wherein the first and the second light source are aligned thereon (Fig. 1, element 102); an objective lens for causing the light beams from said first light source and second light source to converge on an optical disc (Fig. 1, element 4); a hologram for diffracting the light reflected from said optical disc and returned through said objective lens and directing the reflected light to a light-receiving element (Fig. 1, element 18); a diffraction grating which is placed on the optical path between said second light source and the hologram, one surface of which emits the 0-order and first-order diffraction light for the light beam from said second light source (Fig. 1, element 15A); and a signal processing circuit which processes the photoelectric conversion output from said light-receiving element and subjects the photoelectric conversion output of the reflected light corresponding to said first-order diffraction light to a tracking error process and obtains a signal playback output and/or a tracking error signal by phase sensing for the photoelectric conversion output of the reflected light corresponding to the 0-order

diffraction light (Fig. 1, elements 32a and 32b; Col. 4, lines 7-11; and Col. 5, lines 19-24). The examiner notes that the hologram receives non-diffracted, 100% 0-order light from the light beam forwarded from the first light source and 0-order and first-order diffraction light from the light beam forwarded from the second light source. Kuono does not disclose the that the diffraction grating is placed on the optical path between said first light source and the hologram **and** on the optical path between said second light source and the hologram and which produces almost 100% of the 0-order diffraction light for the light beam forwarded from said first light source and has a first order diffraction efficiency of almost zero **and** emits the 0-order and first-order diffraction light for the light beam from said second light source. The examiner further notes that the hologram acts as a beam splitter. Kuono also does not disclose that another surface of the diffraction grating is designed to realize a differential push-pull method of sensing a tracking error sense signal.

Toyoda discloses a diffraction grating (Fig. 2, element 22) that is placed on the optical path between a first light source (Fig. 2, element 21b) and a beam splitter (Fig. 2, element 23) and on the optical path between a second light source (Fig. 2, element 21a) and the beam splitter, one surface of which produces almost 100% of the 0-order diffraction light for the light beam forwarded from the first light source and has a first order diffraction efficiency of almost zero and emits the 0-order and first-order diffraction light for the light beam from the second light source (Page 4, lines 17-21 and Page 4, line 50-Page 5, line 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the diffraction grating of Kuono with the diffraction grating of Toyoda, the motivation being to place the first and second light sources closer

together and reduce the overall footprint of the disk drive system. Kouno in view of Toyoda does not disclose that another surface of the diffraction grating is designed to realize a differential push-pull method of sensing a tracking error sense signal; wherein the second diffraction grating does not diffract returned light from the recording medium.

Ohnishi discloses a diffraction grating (Fig. 10, element 2a) having a surface; wherein the surface of the diffraction grating does not diffract returned light from a recording medium (Fig. 10). The surface of the diffraction grating diffracts the light beam forwarded from the first light source into three beams (Col. 10, lines 11-14), thereby allowing use of a differential push-pull method to generate a tracking error signal (Col. 2, lines 25-27). The surface of the diffraction grating is therefore interpreted as being designed to realize a differential push-pull method of sensing a tracking error sense signal. Ohnishi teaches that the differential push-pull method is beneficial because it cancels an offset caused by displacement of the objective lens (Col. 2, lines 22-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include, in the optical head device of Toyoda, the diffraction grating having a surface of Ohnishi, the motivation being to facilitate generation of a tracking error signal using the differential push-pull method when using the light beam from the first light source and thereby, cancel an offset caused by displacement of the objective lens. Toyoda in view of Ohnishi does not disclose that the diffraction grating of Toyoda having the one surface also has the surface of the diffraction grating of Ohnishi.

Mori discloses forming the surfaces of two diffracting devices as part of one optical element (Col. 12, lines 33-36). Mori teaches that by doing so, the relative positions are accurately set and optical adjustment is simplified (Col. 3, line 66-Col. 4, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the surface of the diffraction grating of Toyoda and the surface of the diffraction grating of Ohnishi in the optical head device of Toyoda in view of Ohnishi as one diffraction grating having first and second surfaces as suggested by Mori, the motivation being to accurately set the relative positions of the surfaces and simplify optical adjustment. It is noted that the surface of Toyoda is interpreted as the one surface and the surface of Ohnishi is interpreted as the other surface.

10. Claims 34 and 35 rejected under 35 U.S.C. 103(a) as being unpatentable over Kitamura as applied to claim 22 or 23 in view of Tanaka et al (hereafter Tanaka) (US 5,513,164).

Kitamura discloses the optical head device according to claim 22 and 23, wherein said hologram (Fig. 16, element 6) is constructed and arranged to sense a shift in focus by an astigmatic aberration method (Col. 29, line 64-Col. 65, line 3 and Col. 11, lines 15-31). Kitamura does not disclose that the hologram is constructed and arranged to sense a shift in focus by a mixed aberration method.

Tanaka discloses a mixed aberration hologram as an equivalent to an astigmatism optical system for the purpose of generating a focus error and thereby sensing a shift in focus (Col. 17, lines 7-11).

Therefore, because an astigmatism optical system and a mixed aberration hologram were art-recognized equivalents at the time the invention was made, it would have been obvious to one of ordinary skill in the art to construct and arrange the hologram in the optical head device of Kitamura to sense a shift in focus by a mixed aberration method as suggested by Tanaka for the purpose of generating a focus error.

Citation of Relevant Prior Art

11. Sugiura et al (US 6,130,872) discloses an optical axis of a laser beam of a longer wavelength that is slanted from the optical axis of an objective lens (Fig. 1).

Allowable Subject Matter

12. Claims 27-32 are allowable over the prior art of record.

Response to Arguments

13. Applicant's arguments, filed July 2, 2004, with respect to claims 6-9, 18, 19, 25, 26 and 33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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8/8/04